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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,419	09/09/2005	Andreas Voigt	62800(45107)	5772

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EXAMINER

NAGUBANDI, LALITHA

ART UNIT	PAPER NUMBER
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1621

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/525,419

Applicant(s)

VOIGT ET AL.

Examiner

Laliitha Nagubandi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 9/9/2005.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

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Detailed Action

Status of the Claims

Claims 1-16 are pending. Claims 1-16, are considered for examination in this office action.

Priority

This application is a 371 of PCT/EP03/08846 dated August 8th, 2003, which claims priority to Germany application no. 10238811.3 dated August 8th, 2002.

Specification

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicants' cooperation is requested in correcting any errors of which applicant may become aware of in the specification.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1- 16, are rejected under 35 U.S.C. 103(a) as being unpatentable over Shun et al (EP No. 0521 382 A2 dated July 1st, 1993) and Prasad et al (Ind. Eng. Chem. Res. 2001, 40, 5487-5495).

The instant claims are directed to a continuous process to oxychlorinate olefins and aromatics, comprising the conversion of olefins and aromatics with oxygen and hydrogen chloride in the presence of solid cuprous/cupric salt catalyst in a reactor. The catalyst and the reactants are fed separately into reaction zones and regeneration zones of the reactor. The reaction zone shows a higher concentration of the catalyst in its oxidized form at the solids entry point and the regeneration zone shows a higher concentration of the catalyst in its reduced form. Further, different ratios of CuCl₂, CuCl and CuO are used as the catalyst at the entry point.

Determination of Scope and content of the Prior Art (MPEP § 2141.01)

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Shun et al teach (lines 5-20, EP No. 0521 382 A2 , see the whole document) a process for preparing dichloroethane by oxychlorination of ethylene in presence of a solid catalyst. The catalyst is circulated between the oxidation reactor and a chlorination reactor through a catalyst recovering line and a catalyst feed line. Shun also teaches an oxidation reactor for oxidizing the solid catalyst and a chlorination reactor for chlorinating ethylene in the presence of the solid catalyst.

Prasad et al teach (see page 5487, Ind. Eng. Chem. Res. 2001, 40, 5487-5495) the oxychlorination of ethylene in presence of copper chloride and copper oxide.

Ascertainment of the difference between the Prior Art and Claims (MPEP §2141.02)

The difference between the instant method and Shun et al that the instant method teaches a continuous process of oxychlorination of ethylene, and Shun teaches two-stage oxychlorination reaction. Prasad teaches the combination of copper alts used as the solid catalyst during the oxychlorination but does not specify the exact ratios.

Finding of prima facie obviousness – rational and motivation (MPEP § 142-2143)

Accordingly, one of ordinary skill in the art would be motivated to prepare the instant compounds by combining the teachings of Shun and Prasad available at the time of the invention.

Shun teaches a continuous process of oxychlorination, however the process also involved an oxidation reactor and an chlorination reactor which is sufficient for an ordinary skilled artisan specially a process chemist to modify the process to a continuous process by feeding the reactants and the catalyst into reaction zone and the regeneration zone separately. Coupled with Prasad's

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teachings where determination of the molar ratio is well within the purview of one ordinary skill in the art and would obtain reasonable expectation of success by modifying the molar ratios of the copper salts.

The examiner contends that the combination of references, would lead to the instant process with necessary modification like recycling or regeneration of the catalyst a cost effective measure and an ordinary artisan would have had a reasonable expectation of success at the time of the instant invention hence it is prima facie.

Conclusion

No claims are allowed

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lalitha Nagubandi whose telephone number is 571 272 7996. The examiner can normally be reached on 6.30am to 3.30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman K. Page can be reached on 571 272 0602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status

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information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lalitha Nagubandi
Patent Examiner
Technology Center 1600

March 1st, 2007.

J. PARSA
PRIMARY EXAMINER



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